



# In Practice

WITH DR. RONALD GOLDSTEIN

## Why Not Gold?

The last 30 years have seen an increasing interest in and use of tooth-colored dental restorations. Before the introduction of the porcelain-fused-to-metal restoration, so-called “esthetic” restorations were not in widespread use and cast gold was the restoration of choice for most restorative dentists. The longevity of a properly diagnosed, prepared, constructed, seated, cemented, and finished cast gold restoration has always and continues to exceed any tooth-colored material—either direct or indirect, or from porcelain, composite, or any other material.<sup>1-3</sup> Recently, Christensen<sup>4</sup> questioned whether the “esthetic dentistry pendulum has swung too far,” and proposed “a renewed observation of the desirability of restoration longevity vs an obsession with esthetics.” In an interview about gold, Tucker<sup>5</sup> stated, “Gold castings and gold foil remain the standard by which we judge other restorative materials.” Why, then, do all dentists not use gold? This column discusses this dichotomy, examining specific reasons for its existence and offering suggestions for the future.

### RESTORATIVE GOALS

The restorative goals and needs of both the dentist and the patient should determine the choice of dental procedures and

materials. If the goal is function and longevity, gold should be considered as an option for intra- and extracoronary restorations where esthetics is not a major concern. Most practicing dentists have seen cast and direct gold restorations in their patients’ mouths that were placed more than 30 years ago. Fractures of composite and porcelain restorations occur frequently in the posterior parts of the mouth, particularly on first and second molars. Reasons for this could be related to occlusal interferences, occlusal habits of the patient (vertical and horizontal bruxing), compressive strength of the materials, and biocompatibility. Gold is the most biocompatible material we have to date, with properties very similar to those of natural teeth. Porcelain and composite are inert materials that have very little elastic potential and can fracture relatively easily, particularly under heavy load.

### PATIENTS DO NOT WANT IT

When asked why they do not use more gold, dentists often answer that their patients do not want it. Many times this is a false assumption on the dentist’s part and/or a result of patients’ lack of knowledge. Patients come to us seeking advice and treatment, and if gold is not presented as the only long-term option, or as an option at all, patients of course will assume that other materials work just as well.

Another reason patients may not want gold is that they do not want it to be visible. However, with the proper handling of the mesiobuccal line angle and the extent of the facial flare, many

intracoronary inlays can be hidden and become almost imperceptible.

In addition, many patients have the perception that a gold restorations cost much more than another type. This may have been the case years ago, but lately some dentists charge much more for esthetic restorations, with laboratory fees running between \$300 and \$400. When using a capable laboratory technician the average fee for a well-done gold restoration can be less than half that amount—including the gold. If the dentist has the ability and equipment, the costs can be reduced even further. Cost of the restoration to the patient then becomes a matter of profit margin. A very practical reason why a patient may not choose a gold casting is the perception that it will not be covered by dental insurance. On the contrary, cast and direct gold restorations are both procedures that many insurance companies do reimburse patients for. But because the code numbers, particularly for direct gold, are underused, many companies have archived these old codes and pre-determinations of benefits come back with denials. Some dentists have had success reminding insurance companies that these codes actually exist. They are listed in Table 1.

A final reason why a patient might not want a casting or foil is the perception that gold is “old-fashioned.” This is correct, in that gold is the oldest restorative material used in dentistry, but it is also the one with the longest track record. Patients can be assured that any well-done gold restoration has the potential abil-



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ity to last as long or longer than any other material.

### DENTISTS DO NOT OFFER IT

Stevenson<sup>6</sup> reported the results of a survey of 66 US dental schools regarding the teaching of cast and direct gold restorations. There are presently four dental schools that do not teach cast gold at all and there are no schools that have

**TABLE 1—INSURANCE CODES**

Inlay metallic one surface	D251
Inlay metallic two surface	D2520
Inlay metallic three surface	D2530
Onlay metallic two surface	D2542
Onlay metallic three surface	D2543
Onlay metallic four or more	D2544
Cast gold crown	2990
Gold foil one surface	2410
Gold foil two surface	2420
Gold foil three surface	2430



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any clinical direct gold studies as a requirement for graduation. Students from these schools obviously will not recommend gold.

Another obvious reason why some dentists do not recommend gold is that they have been disappointed in its clinical results. These dentists possibly have not had the advantage of good men-

toring and/or a basic education in both the clinical and laboratory skills necessary to produce fine gold work. Older dentists are retiring and very few younger dentists are being trained to take their places. Laboratories concentrate more on the esthetic systems and train their technicians in these fabrications. All

this makes it more difficult for dentists to find the right laboratory for cast gold.

And unfortunately, many dental schools prepare dentists for the state boards, not private practice. These clinicians often lack, among other things, gold dexterity and management skills, including interpersonal skills.



Figure 1—Lower right quadrant with full cast gold crown and cast gold onlay.



Figure 2—Close-up of cast gold onlay.

A final reason why some dentists do not recommend gold is that they feel a bonded tooth-colored restoration is better for the patient. However, unless esthetics is the major concern, there is no long-term refereed dental literature to support this idea. In fact, gold is the material used as a standard by many comparative tests. Some dentists claim that gold preparations require the removal of too much tooth structure as compared to tooth-colored restorations. However, many gold preparations can be very conservative (eg, slot preparations, distal hollow grinds, and Class One gold foils). All-ceramic crowns, on the other hand, require 2 mm of depth all around a tooth whereas gold crown preparations can be done with less tooth structure removed. As many gold operators know, the goal is to leave as much tooth structure behind as possible and to find ways for resistance and retention form so a crown is not necessary. Recent reports of over-cutting teeth for esthetic reasons and in the process removing too much of the enamel needed for an adequate bond are increasingly common.

Although bonding gold is possible, most dentists who use gold choose to cement their restorations. This allows time for finishing. The bonding process has caused postoperative sensi-

tivity in many cases. Recently, less aggressive etching procedures have been promoted, such as self-etching primers, as these do not remove the smear layer.

### SOME SUGGESTIONS

Cast gold techniques are still taught in most dental schools but not to the extent that they have been in the past. The way cast and direct gold has been taught successfully for many years is in the study club environment. The Richard V. Tucker Academy of Study Clubs ([www.rvtucker.org](http://www.rvtucker.org)) is a prime example of this type of learning. A qualified mentor supervises the operations between eight and 12 dentists working on patients. All dentists observe each other's preparations and completed restorations, as well as share in a critique session after the operations. All study clubs welcome invited guests who are interested in observing and possibly joining or starting new clubs of their own. A weeklong course offers instruction in both cast and direct gold for those who are or are not involved in study clubs; and The Institute runs a variety of courses. Among them is the casting course in Seattle, Washington (contact Dr. Dennis Miya or Janet at 206.244.1618); and the Gerald Stibbs Gold Foil weeklong seminar, which runs yearly in Vancouver, British Columbia, Canada (contact David Thorburn 604.731.5535). The finest gold operators in the world—who share the philosophy and history of these classic dental restorative methods, as well as the clinical technique—present both of these courses. Hands-on participation courses in gold are appearing at some dental meetings and institutes as well, and some dental schools have elective courses or study club-like seminars.

### SUMMING UP

In today's dental world there are many more options of materials and equipment than there were years ago. It can be very confusing for anyone to sift through the marketing and lectures and determine which of the new materials are best suited for

our patients. Classic gold techniques have been around for more than 100 years and have an obvious track record. Leinfelder<sup>7</sup> has stated, "Gold alloys are certainly the best materials by far in maintaining a functional occlusion and longevity." Underused in the recent past, gold is undergoing a comeback in many areas.

It is incumbent on the modern dental professional to be aware of

all the restorative options available, learn how to perform them, and then choose the technique that will be the most appropriate for each situation. Longevity should always be a factor in the decision-making process, and gold continues to be the answer in many applications. ○

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